

# **EXHIBIT 9**

UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS

**ANYWHERECOMMERCE, INC. and  
BBPOS LIMITED,**

**Plaintiffs,**

**v.**

**INGENICO, INC., INGENICO CORP.,  
INGENICO GROUP, SA, and INGENICO  
VENURES SAS,**

**Defendants.**

Civil Docket No: 1:19-cv-11457-IT

**EXPERT REPORT OF IVAN ZATKOVICH**

**FEBRUARY 16, 2022**

**CONFIDENTIAL**

61. With the exception of the Card Reader itself and some aspects of the Microprocessor use, the manufacturers of traditional POS devices do not have designs nor development processes in place to create the other components and technology that is required for mPOS devices. Therefore, new methods of communication, power management, and data security had to be implemented for mPOS devices.

## 5 BBPOS TRADE SECRETS

62. Of the broad collection of proprietary information that BBPOS has developed since it began developing mPOS devices in 2008, it includes the following asserted trade secrets detailed in this section.

63. The first three trade secrets relate to BBPOS being able to communicate credit card information between an mPOS device and the mobile phone using the audio jack (i.e. headphone / microphone port) on the Mobile phone. This approach allows BBPOS to communicate digital information (and even encrypted information) by converting the digital information to an audio signal to send to the mobile phone audio jack, and then reconverting that audio signal back to digital information in the mobile phone. These methods include developing both circuitry and software on BBPOS' mPOS devices, as well as developing software on the Mobile phone (within BBPOS' SDK application).

64. Although, at the time, it was unusual to communicate digital information to a mobile phone using an audio jack, BBPOS chose this approach because almost every mobile phone has an audio jack. Almost all mobile phones have the ability to plug in a headphone or a headphone with a microphone for listening to music or making phone calls, respectively. In the 2012 time period, many mobile phones did not support Bluetooth, WIFI, or USB communication methods, which would be the traditional means for communicating digital information. Therefore,

BBPOS chose to use the audio jack method and to ensure their ability to use their mPOS devices with as many mobile phones as possible.

65. Because BBPOS utilized this unusual method of communicating digital information from the mPOS device to a mobile phone, they had to develop several proprietary methods and techniques to ensure a reliable communication method. This required much research, investment, and multiple testing trials to understand all possible mobile phone and payment system formats that could be used with an mPOS device. After spending much time, and financial investment, BBPOS was able to design a single configurable solution to address this market situation. Among the proprietary methods they used to ensure reliable communication through an audio jack, BBPOS developed:

1. **Audio Jack Polarity detection** – determines if the base of the mobile phone's audio jack has a positive or negative polarity and to route the microphone/input signal appropriately. This enables a single solution to support multiple mobile phone signal formats.
2. **Power Management** – methods for efficient power use for battery powered mPOS devices as well as performing sleep and auto wakeup (Power on) functions in order to conserve power.
3. **Signal control settings and auto gain control** – determines the appropriate gain (e.g. signal thresholds) to use in decoding data, and at what speed to reliably transmit and receive the information based parameters defined for the specific mobile phone being used.

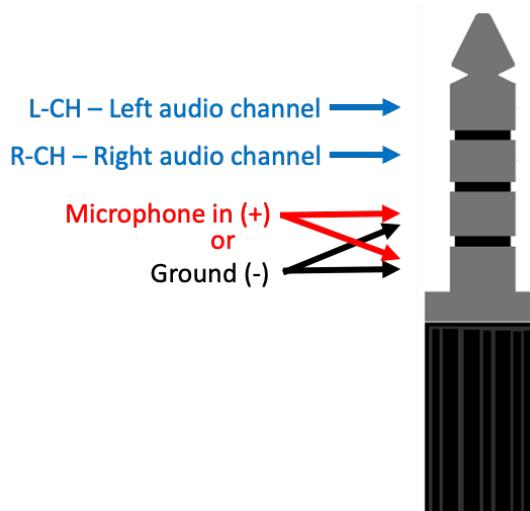
66. The next two trade secret categories relate to BBPOS' general experience in POS data encryption and their extensive testing and implementation of the many communication formats used by different mobile payment applications. Principally, these are:

4. **Communication Formats** – over 25 different formats for sending credit card and transaction related information between the mPOS device and the mobile phone to ensure compatibility with different mobile payment vendor applications.
5. **Data Security / Encryption methods** – methods for encrypting credit card data based on variations of data encryption methods.

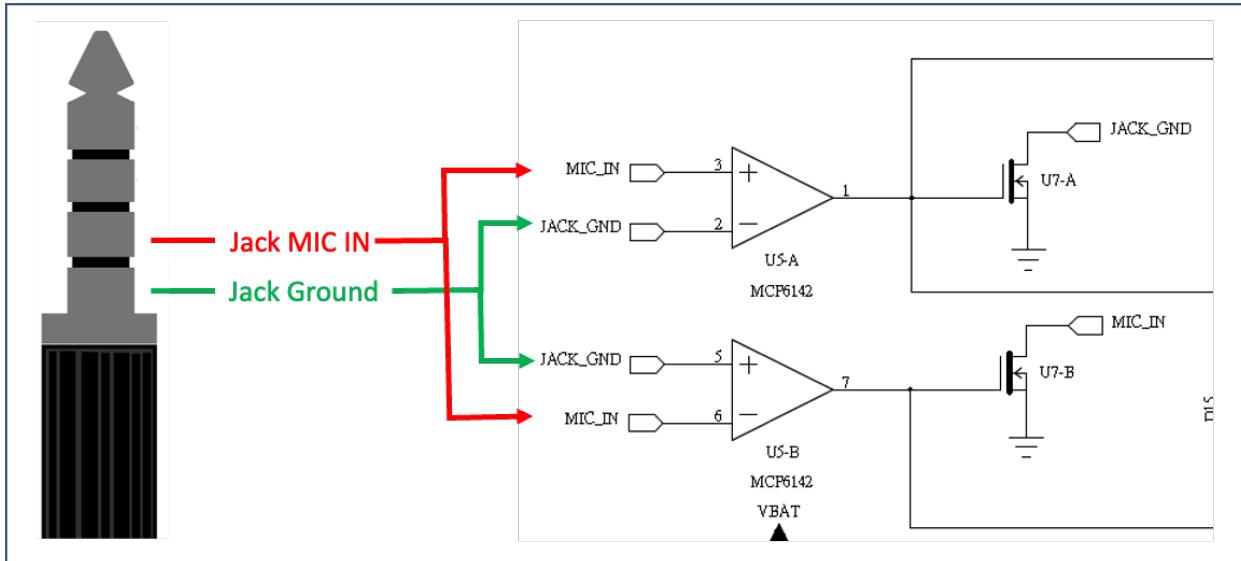
67. These five categories of trade secrets are described in more detail below.

#### **5.1.1 BBPOS' Audio Jack Polarity Detection design**

68. The following diagram shows the “rings” of an audio jack that has a left and right audio channel and microphone channel.



*Mobile Phone Audio Jack*



***BBPOS Polarity detection and reversal circuit***

*[Paypal-PCB1-ST04-V3.1.pdf \[IngenicoInc\\_0009727-IngenicoInc\\_0009729\]](#)*

75. BBPOS incorporated their Polarity Detection circuit design in several of their mPOS devices including the GX series (e.g. G4X, G5X).

### 5.1.2 BBPOS' Power Management design (Auto Power On)

76. Various methods have been developed to optimize the power usage of many types of battery powered electrical devices. However, since very few companies in 2012 had developed mPOS devices that communicated via the mobile phone's audio jack, very few, if any, power management methods had been developed for mPOS devices, especially those using audio jack interfaces, except for BBPOS.

77. BBPOS has designed many efficient mPOS functional circuits as well as efficient power supply circuits for their devices. One of BBPOS' power management designs allows the microprocessor to put the mPOS device to sleep whenever the device is not active and then to "wake up" or automatically turn on the device when needed.

78. There can be several methods for determining when to automatically turn on or wake-up the device. However, the method must determine the correct trigger or “trigger threshold” to use that always reliably wakes up the device when a card transaction will be performed.

79. As part of their power management solution, BBPOS designed a “temporary trigger” that determines when the mobile phone is plugged into the mPOS device and when there is any activity on the audio jack interface (e.g. on the right or left audio channel). During this temporary wake-up period the microprocessor allows the power to stay on, at least for a short period, using a “permanent trigger”. During this temporary wake-up period the microprocessor determines if there is activity on the audio jack to indicate an mPOS initialization or card transaction from the mobile phone. If there is no “valid” activity on the audio jack interface (i.e. no mPOS initialization or transaction), then the mPOS device will power down by turning off the “permanent trigger”.

80. For example, if you were to play music on the mobile phone through the audio jack interface to the mPOS device, the “temporary trigger” would turn on the power to the microprocessor, however as soon as the microprocessor determined that there was no valid mPOS signal, it would immediately turn off the power and put the mPOS device back to sleep.

81. Therefore, BBPOS’ design will automatically power-on or “wake-up” the mPOS whenever the mobile phone sends a valid initialization or transaction to the mPOS device. In summary, BBPOS’ power management for their mPOS device includes up to three different types of circuits as follows:

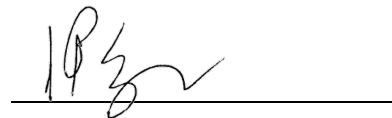
- Attached to email along with datasheets for chosen chipsets [IngenicoInc\_0134751-IngenicoInc\_0134759]
- Email: Fwd: Paypal G4X – schematic [BBPOS\_0005664]
  - Email providing files to BBPOS to ROAM/Ingenico PM per request
  - Sent 7/17/2012 From Daniel Tsai, BBPOS to Christopher Rotsaert, ROAM/Ingenico
  - Attachments:
    - Paypal-PCB1-ST04-V3.1.pdf [BBPOS\_0005665-BBPOS\_0005667] – shows the **power management circuitry**
- Attached Document: Paypal-PCB1-ST04-V3.1.pdf [BBPOS\_0005665-BBPOS\_0005667]
  - Schematic showing the design of the PayPal mPOS device including both the polarity detection and the power management circuitry.
  - Sent 7/17/2012 From Daniel Tsai, BBPOS to Christopher Rotsaert, ROAM/Ingenico
  - Attached to email sent by Daniel Tsai [BBPOS\_0005664]
- Email: Re: One missing scheme for explanation : solution to handle the 2 categories of phones for amplitude definition [BBPOS\_0005646]
  - Email providing explanation of the swiper output with regard to questions on amplitude levels and power management “When the 5KHz tone is replaced by 7KHz tone, the swiper will output in lower amplitude level. Please check attached documents about battery estimation and format ID list.”
  - Sent 7/17/2012 From Daniel Tsai, BBPOS to Christopher Rotsaert, ROAM/Ingenico
  - Attachments:
    - battery life estimation.pages [BBPOS\_0005647-BBPOS\_0005648]
    - BBPOS-DataOutputFormat-V1.21.doc [BBPOS\_0005649-BBPOS\_0005663]
- Email: Re: One missing scheme for explanation : solution to handle the 2 categories of phones for amplitude definition [IngenicoInc\_0010655-IngenicoInc\_0010656]
  - Related to previous email string – Daniel Tsai BBPOS continues to advise ROAM/Ingenico PM on power management concepts – in this email he is answering specific questions posed by Rotsaert. He actually shares that two components are wired together to implement the capability.
  - Sent 7/27/2012 From Daniel Tsai, BBPOS to Christopher Rotsaert, ROAM/Ingenico

## 8 CONCLUSIONS

193. Within a reasonable degree of professional certainty, I believe that Ingenico has misappropriated these 5 trade secrets they received from BBPOS to produce their iTMP line of products.

194. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Executed this 16th day of February 2022.



Ivan Zatkovich